



SOHIO ALASKA PETROLEUM COMPANY

*Air-fle*  
*cc: Mike Johnston*

3111 "C" STREET  
ANCHORAGE, ALASKA

TELEPHONE (907) 265-0000

MAIL: POUCH 6-612  
ANCHORAGE, ALASKA 99502

August 17, 1981  
cc: 38,458

Mr. Ernest W. Mueller, Commissioner  
Alaska Department of Environmental Conservation  
Pouch O  
Juneau, Alaska 99811

Attention: Mr. Stan Hungerford

Subject: Submittal of Air Quality Control Permit Applications  
for Additional Facilities in the Prudhoe Bay Oil Field.

Dear Sir:

We hereby submit for your review and approval four Air Quality Control permit applications for proposed facilities to be constructed in the Prudhoe Bay Oil Field. These proposed facilities, to be located at GC-1, GC-2, GC-3, and the West Injection Plant, provide additional turbine capacity for the previously permitted Produced Water Injection, Low Pressure Separation, Artificial Lift, and Waterflood projects.

The air quality impacts from the proposed facilities are further defined in the following documents sent to your office on February 5, 1981 and June 9, 1981, respectively: PSD Permit Application for New Sources to be Added to Existing and Previously Permitted Facilities in the Prudhoe Bay Unit (PSD IV), Radian Corporation, January, 1981 and Air Quality Impacts of Prudhoe Bay Increment IV Sources as Estimated by the Texas Climatological Model (TCM-1), Radian Corporation, May, 1981.

Should there be any technical questions regarding the above applications please contact Mark Wagner at (907) 263-5137. Any other questions pertaining to this application can be directed to the undersigned at (907) 263-5427.

Very truly yours,

*Herman A. Schmidt*

Herman A. Schmidt  
Manager Lands

Attachments

cc: Mr. Doug Lowery - ADEC, Fairbanks  
Mr. Jim Sweeney - EPA, Anchorage

MRW/kg

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**ALASKA OPERATIONS**

USEPA REG



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APPLICATION FOR  
AIR QUALITY CONTROL PERMIT TO OPERATEI. FIRM NAME Sohio Alaska Petroleum CompanyAddress Pouch 6-612Anchorage, Alaska 99502 Telephone Number (907) 276-5111LEGAL OWNER Prudhoe Bay UnitSohio Alaska Petroleum Company (West Side Operators)Address Pouch 6-612Anchorage, Alaska 99502 Telephone Number (907) 276-5111II. NAME OF FACILITY: Gathering Center No. 1III. LOCATION OF FACILITY: Prudhoe Bay, Alaska

IV. NATURE OF BUSINESS (Include type of product, production rate, size and history of facility, listing the units having air contaminant emissions and control equipment type and efficiency)

Fully integrated petroleum products company.

Products: Petroleum

Production rate: 720,000  $\pm$  barrels per day of crude oil.

Principal source of air pollutant emissions are natural gas fired turbines.

V. LIST OF ATTACHMENTS (The information required to fully describe the facility outlined in the Permit Application Information and Instructions or other text, drawings, photographs and maps)

Attachment I: Air Quality Data Submittal Form.

VI. CERTIFICATION STATEMENT: I certify under penalty of perjury that to the best of my knowledge all of the above information and attachments are true and correct.

Herman A. Schmidt  
SIGNATURE Herman A. Schmidt8/18/81  
DateManger, Lands

TITLE



## AIR QUALITY DATA SUBMITTAL FORM

FIRM NAME Sohio Alaska Petroleum Company ADDRESS Pouch 6-612, Anchorage, Ak. 99502 PHONE NUMBER (907) 276-5111NATURE OF BUSINESS OPERATION Fully integrated petroleum products company.COMPANY REPRESENTATIVE ON AIR QUALITY MATTERS Herman A. Schmidt or Mark R. Wagner PHONE NUMBER (907) 263-5427  
or (907) 263-5137SIGNATURE Herman A. Schmidt DATE August 18, 1981Tabulate as completely as possible all fuel burning units, incinerators, flares, auxiliary burners, or processes which may emit particulate matter, SO<sub>2</sub>, CO or NO<sub>2</sub>.CHARACTERIZATION OF AIR CONTAMINANT  
EMITTING UNITS/PROCESSES

| Unit No.<br>GC-1 | Type of Unit<br>or Process | Rated Capacity,<br>indicate, BTU/hr,<br>HP, KW, lb/hr, or<br>process production | Type of<br>Fuel | Quantity/hr <sup>3</sup><br>lb, gal, ft <sup>3</sup><br>ft <sup>3</sup> /hr. | Sulfur<br>Content          | Ash<br>Content | Heat<br>Content<br>BTU/SCF | Usage - % for<br>space heat, power generation, process heat |
|------------------|----------------------------|---|-----------------|--|----------------------------|----------------|----------------------------|---|
| 2                | Turbine                    | 7.5 MHP   | Natural<br>Gas  | 80,000   | 20 ppm<br>H <sub>2</sub> S | N/A            | 914                        | 100% Pump Drivers   |
| *                | Turbine<br>Capacity        | 35 MHP  | Natural<br>Gas  | 375,000  | 20 ppm<br>H <sub>2</sub> S | N/A            | 914                        | 100% Compressor Driver                                      |
|                  |                            |   |                 |  |                            |                |                            |   |
|                  |                            |   |                 |  |                            |                |                            |   |
|                  |                            |   |                 |  |                            |                |                            |   |
|                  |                            |   |                 |  |                            |                |                            |   |
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|                  |                            |   |                 |  |                            |                |                            |   |
|                  |                            |   |                 |  |                            |                |                            |   |
|                  |                            |   |                 |  |                            |                |                            |   |

\*Total capacity to be attained w/multiple turbines w/individual capacities ranging from 22.6 MHP to 36MHP.



AIR CONTAMINANT EMISSION DATA  
FOR EACH UNIT/PROCESS

| Unit No.<br>GC-1     | Normal Operating Schedule<br>hrs/day, days/wk, wks/year |   |    | Stack or emissions point<br>height, diameter, exhaust temp<br>m m. °K |      |     | Control Equipment<br>type, capacity, efficiency |     |     | Monitoring<br>Devices | Total               |          |                 |      |
|----------------------|---|---|----|---|------|-----|---|-----|-----|-----------------------|---------------------|----------|-----------------|------|
|                      |   |   |    |   |      |     |   |     |     |                       | Emissions Estimates |          |                 |      |
|                      |   |   |    |   |      |     |   |     |     |                       | SO <sub>2</sub>     | P.M. CO. | NO <sub>2</sub> |      |
| 2-7.5 MHP            | 24  | 7 | 52 | 22.2  | 1.16 | 450 | N/A   | N/A | N/A |                       | 2.4                 | 9.9      | 72              | 401  |
| 35 MHP *<br>Capacity | 24  | 7 | 52 | 22.2  | 1.98 | 450 | N/A   | N/A | N/A |                       | 5.5                 | 23.0     | 169             | 935  |
|                      |   |   |    |   |      |     |   |     |     |                       |                     |          |                 |      |
|                      |   |   |    |   |      |     |   |     |     |                       |                     |          |                 |      |
|                      |   |   |    |   |      |     |   |     |     |                       |                     |          |                 |      |
|                      |   |   |    |   |      |     |   |     |     |                       |                     |          |                 |      |
|                      |   |   |    |   |      |     |   |     |     | Total                 | 7.9                 | 32.9     | 241             | 1336 |

\*Total capacity to be attained w/multiple turbines w/individual capacities ranging from 22.6 MHP to 36 MHP.

Bulk Storage/Handling Facilities-  
Petroleum Products; Fuels, Gravel, Concrete

[illegible]



APPLICATION FOR  
AIR QUALITY CONTROL PERMIT TO OPERATE

I. FIRM NAME Sohio Alaska Petroleum Company  
Address Pouch 6-612  
Anchorage, Alaska 99502 Telephone Number (907) 276-5111

LEGAL OWNER Prudhoe Bay Unit  
Sohio Alaska Petroleum Company (West Side Operators)  
Address Pouch 6-612  
Anchorage, Alaska 99502 Telephone Number (907) 276-5111

II. NAME OF FACILITY: Gathering Center No. 2

III. LOCATION OF FACILITY: Prudhoe Bay, Alaska

IV. NATURE OF BUSINESS (Include type of product, production rate, size and history of facility, listing the units having air contaminant emissions and control equipment type and efficiency)

Fully integrated petroleum products company.

Products: Petroleum

Production rate: 720,000  $\pm$  barrels per day of crude oil.

Principal source of air pollutant emissions are natural gas fired turbines.

V. LIST OF ATTACHMENTS (The information required to fully describe the facility outlined in the Permit Application Information and Instructions or other text, drawings, photographs and maps)

Attachment I: Air Quality Data Submittal Form.

VI. CERTIFICATION STATEMENT: I certify under penalty of perjury that to the best of my knowledge all of the above information and attachments are true and correct.

Herman A. Schmidt  
SIGNATURE Herman A. Schmidt

8/13/81  
Date

Manger, Lands  
TITLE



## DEPARTMENT OF ENVIRONMENTAL CONSERVATION

## AIR QUALITY DATA SUBMITTAL FORM

FIRM NAME Sohio Alaska Petroleum Company ADDRESS Pouch 6-612, Anchorage, Ak. 99502 PHONE NUMBER (907) 276-5111  
NATURE OF BUSINESS OPERATION Fully integrated petroleum products company.  
COMPANY REPRESENTATIVE ON AIR QUALITY MATTERS Herman A. Schmidt or Mark R. Wagner PHONE NUMBER (907) 263-5427  
SIGNATURE Herman A. Schmidt DATE August 18, 1981

Tabulate as completely as possible all fuel burning units, incinerators, flares, auxiliary burners, or processes which may emit particulate matter, SO<sub>2</sub>, CO or NO<sub>2</sub>.

CHARACTERIZATION OF AIR CONTAMINANT  
EMITTING UNITS/PROCESSES

| Unit No. | Type of Unit or Process | Rated Capacity, indicate, BTU/hr, HP, KW, lb/hr, or process production | Type of Fuel | Quantity/hr <sup>3</sup><br>lb, gal, ft <sup>3</sup><br>ft <sup>3</sup> /hr. | Sulfur Content          | Ash Content | Heat Content<br>BTU/SCF | Usage - % for<br>space heat, power generation, process heat |
|----------|-------------------------|--|--------------|--|-------------------------|-------------|-------------------------|---|
| GC-2     |                         |  |              |  |                         |             |                         |   |
| 3        | Turbine                 | 7.5 MHP  | Natural Gas  | 80,000   | 20 ppm H <sub>2</sub> S | N/A         | 914                     | 100% Pump Drivers   |
| *        | Turbine Capacity        | 45 MHP   | Natural Gas  | 482,000  | 20 ppm H <sub>2</sub> S | N/A         | 914                     | 100% Compressor Drivers                                     |
|          |                         |  |              |  |                         |             |                         |   |
|          |                         |  |              |  |                         |             |                         |   |
|          |                         |  |              |  |                         |             |                         |   |
|          |                         |  |              |  |                         |             |                         |   |
|          |                         |  |              |  |                         |             |                         |   |
|          |                         |  |              |  |                         |             |                         |   |
|          |                         |  |              |  |                         |             |                         |   |

\*Total capacity to be attained w/multiple turbines w/individual capacities ranging from 22.6 MHP to 36MHP.



AIR CONTAMINANT EMISSION DATA  
FOR EACH UNIT/PROCESS

| Unit No.<br>GC-2     | Normal Operating<br>Schedule<br>hrs/day, days/wk, wks/year |   |    | Stack or emissions point<br>height, diameter, exhaust temp<br>m m °K |      |     | Control Equipment<br>type, capacity, efficiency |     |     | Monitoring<br>Devices | Total               |      |     |                 |
|----------------------|--|---|----|--|------|-----|---|-----|-----|-----------------------|---------------------|------|-----|-----------------|
|                      |  |   |    |  |      |     |   |     |     |                       | Emissions Estimates |      |     |                 |
|                      |  |   |    |  |      |     |   |     |     |                       | SO <sub>2</sub>     | P.M. | CO. | NO <sub>2</sub> |
|                      |  |   |    |  |      |     |   |     |     |                       | Ton/Yr              |      |     |                 |
| 3-7.5 MHP            | 24   | 7 | 52 | 22.2   | 1.16 | 450 | N/A   | N/A | N/A |                       | 3.6                 | 14.8 | 109 | 601             |
| 45 MHP *<br>Capacity | 24   | 7 | 52 | 22.2   | 1.98 | 450 | N/A   | N/A | N/A |                       | 7.1                 | 29.6 | 217 | 120             |
|                      |  |   |    |  |      |     |   |     |     |                       |                     |      |     |                 |
|                      |  |   |    |  |      |     |   |     |     |                       |                     |      |     |                 |
|                      |  |   |    |  |      |     |   |     |     |                       |                     |      |     |                 |
|                      |  |   |    |  |      |     |   |     |     |                       |                     |      |     |                 |
|                      |  |   |    |  |      |     |   |     |     |                       |                     |      |     |                 |
|                      |  |   |    |  |      |     |   |     |     | Total                 | 10.7                | 44.4 | 326 | 180             |

\*Total capacity to be attained w/multiple turbines w/individual capacities ranging from 22.6 MHP to 36 MHP.

Bulk Storage/Handling Facilities-  
Petroleum Products; Fuels, Gravel, Concrete

[illegible]



APPLICATION FOR  
AIR QUALITY CONTROL PERMIT TO OPERATEI. FIRM NAME Sohio Alaska Petroleum CompanyAddress Pouch 6-612Anchorage, Alaska 99502Telephone Number (907) 276-5111LEGAL OWNER Prudhoe Bay UnitSohio Alaska Petroleum Company (West Side Operators)Address Pouch 6-612Anchorage, Alaska 99502Telephone Number (907) 276-5111II. NAME OF FACILITY: Gathering Center No. 3III. LOCATION OF FACILITY: Prudhoe Bay, Alaska

IV. NATURE OF BUSINESS (Include type of product, production rate, size and history of facility, listing the units having air contaminant emissions and control equipment type and efficiency)

Fully integrated petroleum products company.

Products: PetroleumProduction rate: 720,000 ± barrels per day of crude oil.

Principal source of air pollutant emissions are natural gas fired turbines.

V. LIST OF ATTACHMENTS (The information required to fully describe the facility outlined in the Permit Application Information and Instructions or other text, drawings, photographs and maps)

Attachment I: Air Quality Data Submittal Form.

VI. CERTIFICATION STATEMENT: I certify under penalty of perjury that to the best of my knowledge all of the above information and attachments are true and correct

Herman A. SchmidtSIGNATURE Herman A. Schmidt8/13/81  
DateManger, Lands

TITLE



## DEPARTMENT OF ENVIRONMENTAL CONSERVATION

## AIR QUALITY DATA SUBMITTAL FORM

FIRM NAME Sohio Alaska Petroleum Company ADDRESS Pouch 6-612, Anchorage, Ak. 99502 PHONE NUMBER (907) 276-5111NATURE OF BUSINESS OPERATION Fully integrated petroleum products company.COMPANY REPRESENTATIVE ON AIR QUALITY MATTERS Herman A. Schmidt or Mark R. Wagner PHONE NUMBER (907) 263-5427  
or (907) 263-5137SIGNATURE Herman A. Schmidt DATE August 18, 1981Tabulate as completely as possible all fuel burning units, incinerators, flares, auxiliary burners, or processes which may emit particulate matter, SO<sub>2</sub>, CO or NO<sub>2</sub>.CHARACTERIZATION OF AIR CONTAMINANT  
EMITTING UNITS/PROCESSES

| Unit No.<br>GC-3 | Type of Unit<br>or Process | Rated Capacity,<br>indicate, BTU/hr,<br>HP, KW, lb/hr, or<br>process production | Type of<br>Fuel | Quantity/hr,<br>lb, gal, ft <sup>3</sup><br>ft <sup>3</sup> /hr. | Sulfur<br>Content          | Ash<br>Content | Heat<br>Content<br>BTU/SCF | Usage - % for<br>space heat, power generation, process heat |
|------------------|----------------------------|---|-----------------|--|----------------------------|----------------|----------------------------|---|
| 1                | Turbine                    | 7.5 MHP   | Natural<br>Gas  | 80,000   | 20 ppm<br>H <sub>2</sub> S | N/A            | 914                        | 100% Pump Driver  |
| *                | Turbine<br>Capacity        | 60 MHP  | Natural<br>Gas  | 643,000  | 20 ppm<br>H <sub>2</sub> S | N/A            | 914                        | 100% Compressor Driver                                      |
|                  |                            |   |                 |  |                            |                |                            |   |
|                  |                            |   |                 |  |                            |                |                            |   |
|                  |                            |   |                 |  |                            |                |                            |   |
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|                  |                            |   |                 |  |                            |                |                            |   |
|                  |                            |   |                 |  |                            |                |                            |   |

\*Total capacity to be attained w/multiple turbines w/individual capacities ranging from 22.6 MHP to 36MHP.



AIR CONTAMINANT EMISSION DATA  
FOR EACH UNIT/PROCESS

| Unit No.<br>GC-3     | Normal Operating<br>Schedule<br>hrs/day, days/wk, wks/year |   |    | Stack or emissions point<br>height, diameter, exhaust temp<br>m m °K |      |     | Control Equipment<br>type, capacity, efficiency |     |     | Monitoring<br>Devices | Total               |      |     |                 |
|----------------------|--|---|----|--|------|-----|---|-----|-----|-----------------------|---------------------|------|-----|-----------------|
|                      |  |   |    |  |      |     |   |     |     |                       | Emissions Estimates |      |     |                 |
|                      |  |   |    |  |      |     |   |     |     |                       | SO <sub>2</sub>     | P.M. | CO. | NO <sub>2</sub> |
|                      |  |   |    |  |      |     |   |     |     |                       | Ton/Yr              |      |     |                 |
| 1-7.5 MHP            | 24   | 7 | 52 | 22.2   | 1.16 | 450 | N/A   | N/A | N/A |                       | 1.2                 | 5.0  | 36  | 200             |
| 60 MHP *<br>Capacity | 24   | 7 | 52 | 22.2   | 1.98 | 450 | N/A   | N/A | N/A |                       | 9.5                 | 39.4 | 290 | 1604            |
|                      |  |   |    |  |      |     |   |     |     |                       |                     |      |     |                 |
|                      |  |   |    |  |      |     |   |     |     |                       |                     |      |     |                 |
|                      |  |   |    |  |      |     |   |     |     |                       |                     |      |     |                 |
|                      |  |   |    |  |      |     |   |     |     |                       |                     |      |     |                 |
|                      |  |   |    |  |      |     |   |     |     | Total                 | 10.7                | 44.4 | 326 | 1804            |

\*Total capacity to be attained w/multiple turbines w/individual capacities ranging from 22.6 MHP to 36 MHP.

Bulk Storage/Handling Facilities-  
Petroleum Products; Fuels, Gravel, Concrete

[illegible]



APPLICATION FOR  
AIR QUALITY CONTROL PERMIT TO OPERATEI. FIRM NAME Sohio Alaska Petroleum CompanyAddress Pouch 6-612Anchorage, Alaska 99502 Telephone Number (907) 276-5111LEGAL OWNER Prudhoe Bay UnitSohio Alaska Petroleum Company (West Side Operators)Address Pouch 6-612Anchorage, Alaska 99502 Telephone Number (907) 276-5111II. NAME OF FACILITY: West Injection PlantIII. LOCATION OF FACILITY: Prudhoe Bay, Alaska

IV. NATURE OF BUSINESS (Include type of product, production rate, size and history of facility, listing the units having air contaminant emissions and control equipment type and efficiency)

Fully integrated petroleum products company.

Products: Petroleum

Production rate: 720,000  $\pm$  barrels per day of crude oil.

Principal source of air pollutant emissions are natural gas fired turbines.

V. LIST OF ATTACHMENTS (The information required to fully describe the facility outlined in the Permit Application Information and Instructions or other text, drawings, photographs and maps)

Attachment I: Air Quality Data Submittal Form.

VI. CERTIFICATION STATEMENT: I certify under penalty of perjury that to the best of my knowledge all of the above information and attachments are true and correct.

Herman A. SchmidtSIGNATURE Herman A. Schmidt8/18/81  
DateManger, Lands

TITLE



## AIR QUALITY DATA SUBMITTAL FORM

FIRM NAME Sohio Alaska Petroleum Company ADDRESS Pouch 6-612, Anchorage, Ak. 99502 PHONE NUMBER (907) 276-5111NATURE OF BUSINESS OPERATION Fully integrated petroleum products company.COMPANY REPRESENTATIVE ON AIR QUALITY MATTERS Herman A. Schmidt or Mark R. Wagner PHONE NUMBER (907) 263-5427  
or (907) 263-5137

SIGNATURE \_\_\_\_\_ DATE \_\_\_\_\_

Tabulate as completely as possible all fuel burning units, incinerators, flares, auxiliary burners, or processes which may emit particulate matter, SO<sub>2</sub>, CO or NO<sub>2</sub>.CHARACTERIZATION OF AIR CONTAMINANT  
EMITTING UNITS/PROCESSES

| Unit No.<br>West In-<br>jection<br>Plant | Type of Unit<br>or Process | Rated Capacity,<br>indicate, BTU/hr,<br>HP, KW, lb/hr, or<br>process production | Type of<br>Fuel | Quantity/hr,<br>lb, gal, ft <sup>3</sup><br>ft <sup>3</sup> /hr. | Sulfur<br>Content          | Ash<br>Content | Heat<br>Content<br>BTU/SCF | Usage - % for<br>space heat, power generation, process heat |
|--|----------------------------|---|-----------------|--|----------------------------|----------------|----------------------------|---|
| *  | Turbine<br>Capacity        | 25 MHP  | Natural<br>Gas  | 268,000  | 20 ppm<br>H <sub>2</sub> S | N/A            | 914                        | 100% compressor driver                                      |
|  |                            |   |                 |  |                            |                |                            |   |
|  |                            |   |                 |  |                            |                |                            |   |
|  |                            |   |                 |  |                            |                |                            |   |
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|  |                            |   |                 |  |                            |                |                            |   |
|  |                            |   |                 |  |                            |                |                            |   |

\*Total capacity to be attained w/multiple turbines w/individual capacities ranging from 22.6 MHP to 36MHP.



AIR CONTAMINANT EMISSION DATA  
FOR EACH UNIT/PROCESS

| Unit No.<br>West In-<br>jection<br>Unit                         | Normal Operating<br>Schedule<br>hrs/day, days/wk, wks/year |          |                 | Stack or emissions point<br>height, diameter, exhaust temp<br>m m. °K |      |     | Control Equipment<br>type, capacity, efficiency |     |     | Monitoring<br>Devices | Total               |      |      |     |     |
|---|--|----------|-----------------|---|------|-----|---|-----|-----|-----------------------|---------------------|------|------|-----|-----|
|   |  |          |                 |   |      |     |   |     |     |                       | Emissions Estimates |      |      |     |     |
|   | SO <sub>2</sub>  | P.M. CO. | NO <sub>2</sub> | Ton/Yr  |      |     |   |     |     |                       |                     |      |      |     |     |
| 25 MHP *<br>Capacity  | 24   | 7        | 52              | 22.2  | 1.98 | 450 | N/A   | N/A | N/A |                       | 3.9                 | 16.4 | 121  | 668 |     |
|   |  |          |                 |   |      |     |   |     |     |                       |                     |      |      |     |     |
|   |  |          |                 |   |      |     |   |     |     |                       |                     |      |      |     |     |
|   |  |          |                 |   |      |     |   |     |     |                       |                     |      |      |     |     |
|   |  |          |                 |   |      |     |   |     |     |                       |                     |      |      |     |     |
|   |  |          |                 |   |      |     |   |     |     |                       |                     |      |      |     |     |
|   |  |          |                 |   |      |     |   |     |     |                       |                     |      |      |     |     |
| *Total capacity to be attained w/multiple turbines w/individual |  |          |                 |   |      |     |   |     |     |                       | Total               | 3.9  | 16.4 | 121 | 668 |

|   |       |     |      |     |     |
|---|-------|-----|------|-----|-----|
| *Total capacity to be attained w/multiple turbines w/individual capacities ranging from 22.6 MHP to 36 MHP. | Total | 3.9 | 16.4 | 121 | 668 |
|---|-------|-----|------|-----|-----|

Bulk Storage/Handling Facilities-  
Petroleum Products, Fuels, Gravel, Concrete

[illegible]